

## **REMARKS**

In response to the Office Action, Claims 1-10 are amended. Claim 15 was previously cancelled. Claims 1-14 remain in the Application. Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

### **I. Examiner Interview Summary**

Applicants' representative (Tong Lee, Reg. No. 48,582) conducted a telephonic Examiner Interview on May 13, 2008 to discuss proposed amendment to Claim 1. The Examiner maintained that Sartorius teaches or suggests the proposed amendment. No conclusion was reached during the interview.

### **II. Claims Rejected Under 35 U.S.C. § 103(a)**

A. Claims 1-6 and 10-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sartorius et al., *Dispersive Self Q-Switching in Self-Pulsating DFB Lasers*, IEEE JQE, vol. 33, No. 2, February 1997, pgs. 211-217 ("Sartorius") in view of U.S. Patent No. 6,018,541 issued to Huang ("Huang").

To establish a *prima facie* case of obviousness, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art.

Applicants amend Claim 1 to improve clarity and to include additional patentable features. Applicants submit that Sartorius in view of Huang does not teach or suggest each of the elements of amended Claim 1, which includes the limitations of:

"the DFB laser section includes a complex-coupled diffraction grating and an active structure for controlling the intensity of laser light, to oscillate laser light in a specific single mode independent of a phase variation of feedback laser light" (emphasis added).

The amendment is supported by the specification, for example, at page 9, lines 8-11.

Sartorius discloses a device developed for reproducible self-pulsations. By tuning the phase of the facet reflection, the self-pulsation of the device can be switched on and off (see FIG. 1). Sartorius does not disclose that a complex-coupled diffraction grating and an active structure

are used in a DFB laser to oscillate laser light in a specific single mode independent of a phase variation of feedback laser light. Rather, the oscillation of the laser light, as disclosed in Sartorius, is switched on and off when the phase is tuned.

Further, Sartorius discloses that phase tuning may lead to mode hopping (page 217, second paragraph in the left column). Mode hopping is not an oscillation in a specific single mode, as recited in amended Claim 1. Sartorius mentions that an additional parameter is required to prevent this mode hopping. However, there is no indication in Sartorius as to what this additional parameter is. Sartorius does not disclose a connection between the use of a complex-coupled diffraction grating and the oscillation of laser light in a specific single mode.

Thus, Sartorius does not teach or suggest each of the elements of amended Claim 1.

Huang does not supply the missing elements. Huang is relied on for disclosing a DFB laser waveguide wherein the grating is complex coupled. However, Huang does not disclose that a complex-coupled diffraction grating and an active structure are used in a DFB laser to oscillate laser light in a specific single mode independent of a phase variation of feedback laser light. Thus, Claim 1 and its dependent claims, namely, Claims 2-6 and 10-11 are non-obvious over Sartorius in view of Huang.

Accordingly, reconsideration and withdrawal of the § 103 rejection of Claims 1-6 and 10-11 are requested.

B. Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sartorius and Huang in view of U.S. Patent No. 5,177,758 issued to Oka et al (“Oka”).

Claim 9 depends from Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claim 1, Sartorius and Huang do not teach or suggest each of the elements of Claim 9.

The Examiner cites Oka for teaching the alignment of the central axis. However, Oka does not teach or suggest the amended limitations of the DBF laser section. Thus, Claim 9 is non-obvious over the cited references. Accordingly, reconsideration and withdrawal of the § 103 rejection of Claim 9 are requested.

C. Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sartorius and Huang in view of U.S. Patent No. 5,841,799 issued to Hiroki et al (“Hiroki”).

Claim 12 depends from Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claim 1, Sartorius and Huang do not teach or suggest each of the elements of Claim 12.

Hiroki does not teach or suggest the amended limitations of the DFB laser section. Thus, Claim 12 is non-obvious over the cited references. Accordingly, reconsideration and withdrawal of the § 103 rejection of Claim 12 are requested.

D. Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sartorius and Huang in view of U.S. Patent No. 4,995,048 issued to Kuindersma et al. (“Kuindersma”).

Claim 13 depends from Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claim 1, Sartorius and Huang do not teach or suggest each of the elements of Claim 13.

Kuindersma does not teach or suggest the amended limitations of the DFB laser. Thus, Claim 13 is non-obvious over the cited references. Accordingly, reconsideration and withdrawal of the § 103 rejection of Claim 13 are requested.

E. Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Sartorius and Huang in view of U.S. Patent No. 6,031,860 issued to Nitta et al (“Nitta”).

Claim 14 depends from Claim 1 and incorporates the limitations thereof. Thus, for at least the reasons mentioned above in regard to Claim 1, Sartorius and Huang do not teach or suggest each of the elements of Claim 14.

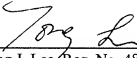
Nitta does not teach or suggest the amended limitations of the DFB laser. Thus, Claim 14 is non-obvious over the cited references. Accordingly, reconsideration and withdrawal of the § 103 rejection of Claim 14 are requested.

### CONCLUSION

In view of the foregoing, it is believed that all claims are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666.

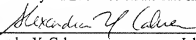
Respectfully submitted,  
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Alexandra Y. Caluen                      July 14, 2008